

Trip Report for the
Second International Symposium on Spacecraft Ground Control and Data
Systems (SCD II) and
meeting at the Brazilian National Observatory
by Carla Matusow

The Second International Symposium on Spacecraft Ground Control and Data Systems (SCD II) and the Fourteenth International Symposium on Space Flight Dynamics (ISSFD XIV) were held Feb 8 – 12, 1999 in Foz do Iguacu, Brazil.

There were several presentations given describing ground systems in both symposia. The most interesting presentations (to me) were: GMV's flight dynamics COTS software and Science Systems COTS automation software.

One talk in ISSFD XIV described GMV's flight dynamics COTS software. I spoke with a few GMV representatives. GMV's software is comparable to FreeFlyer and STK. Since we just spent \$250K to fix STK problems for AM-1, I think it would be worthwhile to investigate comparable software. We would need Code 572 to evaluate the software in addition to our own evaluation.

An interesting presentation in SCDII by Roger Thompson, from Science Systems, described COTS automation software. I found this software very interesting because it is a COTS products which is similar to the automation software we are writing for the EOS AM-1 Flight Dynamics System. I believe we (Code 580) should evaluate this software for potential use on future systems (flight dynamics or otherwise).

CS-CISI (a French company) developed Orbital Dynamics Software (ODS) for the French space agency (CNES). Pascal Wuszko, from CS-CISI, presented (in SCD II) a description of ODS which performs station keeping for 3-axis stabilized geostationary spacecraft. I think it would be worthwhile to evaluate ODS to see if it can be used for future NASA missions.

Didier Breton, from Matra Marconi Space, presented (in SCD II) a description of the QUARTZ++ flight dynamics COTS software. I think it would be worthwhile to investigate this software. We would need Code 572 to evaluate the software in addition to our own evaluation.

Another interesting presentation in SCD II was given by Jeffrey Fox, from Pacific Northwest National Laboratory, about the Spacecraft Emergency Response System (SERS) system. SERS is web-based and monitors spacecraft operations notifying an operator when an anomaly is found. SERS is used on several SMEX missions and was developed for Code 588.

A presentation by Mina Ogawa in ISSFD XIV, from NASDA, was about a precise orbit determination system, called GUTS. GUTS performs very precise (within a decimeter) orbit determination using GPS and SLR data in real-time and off-line. Although I doubt we could use their software – it's not COTS – it was interesting to talk with someone else who writes flight dynamics software.

In addition, Juan Carlos Caretti and Antonio Menescondi, representatives from CONAE the Argentine space agency, were highly interested in my presentation about AutoProducts. They asked me more questions than anyone else.

Overall, the SCD II conference was a worthwhile experience. I learned valuable information, provided publicity to an interesting NASA project, and made several contacts with other space agencies. I would highly recommend NASA sending representatives to future SCD II conferences. If you have any questions or would like more information, please feel free to contact me.

We met with Paulo Mourilhe Silva at the Brazilian National Observatory in Rio de Janeiro. He showed us the Brazilian timing systems and described how they do time computations. It was very interesting to see the environment he works in and the equipment he uses – both old and new computer equipment in a very old building. I really enjoyed meeting him.